Space Weather Forecast

Issued on Wednesday, 06 March 2024 at 13:26 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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The planned NOAA SWPC data outage on 6th March between 1600 UTC and 2200 UTC has been postponed until further notice. This was due to impact most of our observational data feeds and some models.
https://www.swpc.noaa.gov/news/postponement-planned-network-outage

Space Weather Forecast Headline: Chance of G1/Minor Storms on day 3 (08 Mar) given likely faster solar wind arrival.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Low solar activity throughout. There are eight sunspot regions on the visible disc, with one of the larger regions approaching the western limb. Regions approaching centre disk continue to be the most magnetically complex, with continued slight development. The remaining regions small and generally stable.

No further Earth-directed coronal mass ejections (CMEs) have been observed in available imagery, although modeling ongoing for a CME from the southeast disk later on the 05 Mar.

Solar Wind / Geomagnetic Activity: Solar wind parameters have averaged around 380-440km/s. Total magnetic field strength has been weak throughout. The north-south component has also varied weakly. Geomagnetic activity was Quiet to Unsettled (Kp1-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels with no radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Expected to remain generally low with a slight chance of an isolated Moderate class flare.

Solar Wind / Geomagnetic Activity: A coronal mass ejection (CME) was observed to depart the southwest of the Sun on the 03 Mar and may glance the Earth with impacts possible on day 2 (07 Mar), although this is low confidence. Otherwise solar winds are anticipated to erratically decline towards slow-ambient during the remainder of day 1 (06 Mar). A faster solar wind is then forecast to connect with Earth into day 3 (08 Mar) and persist into day 4 (09 Mar), perhaps reaching elevated levels.

Generally Quiet to Unsettled geomagnetic activity is forecast to continue during days 1-2 (06-07 Mar), with a chance of Active intervals and a slight chance of a G1/Minor Storm into day 2 (07 Mar) given the potential for glancing CME influence. Into day 3 (08 Mar) generally Unsettled conditions expected with Active intervals likely and a chance of G1/Minor Storm intervals in association with the arrival of the faster winds, before conditions likely ease into day 4 (09 Mar).

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to persist at background levels.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	10	25	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	20	20	20	20
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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